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R. G. BONE

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HORIZONTALLY CORED BUILDING BLOCK

Filed April 25, 1928

Fig. 1.

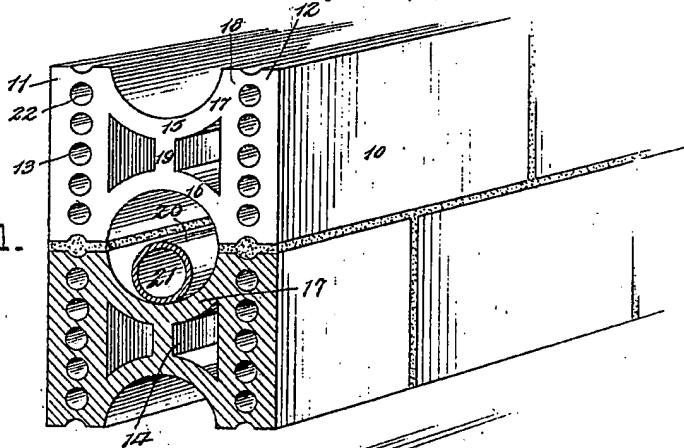


Fig. 2.

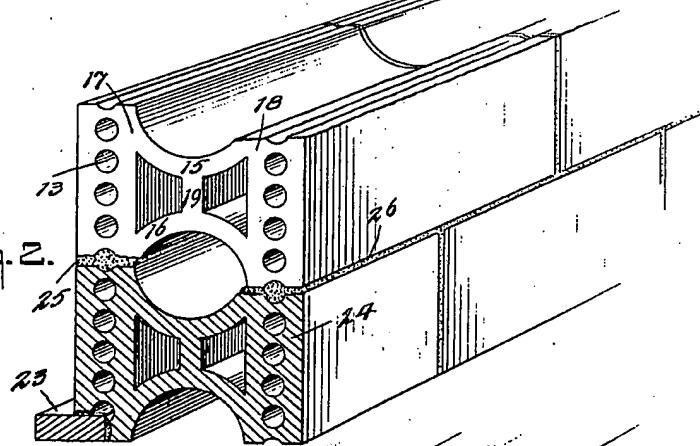
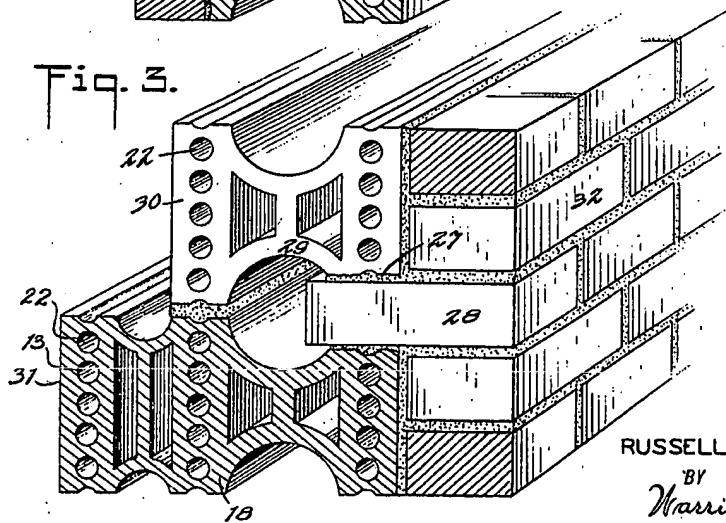


Fig. 3.



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HORIZONTALLY-CORED BUILDING BLOCK.

Application filed April 25, 1928. Serial No. 272,851.

The invention relates in general to a hollow block building wall construction and specifically relates to a form of hollow building block used in forming such a wall construction. The present disclosure constitutes a development of the invention disclosed in my pending application Serial No. 231,762 filed November 7, 1927.

In the drawings accompanying the above identified application there was disclosed a form of hollow tile building block in which the cores extended vertically so that when assembled into the wall construction, vertically extending tiers, conduits, pipes and mortar keys could be received in the vertical aligned openings. In the present disclosure a similar form of block is disclosed distinguishing in one respect from the individual block in the co-pending application by a disposition of the cores extending horizontally and lengthwise parallel to the greatest dimension of the block.

The primary object of the invention is to provide a hollow building block of the horizontally cored type in which vertical strains originating in either of the outer load carrying walls may be transmitted through the intermediate connecting cellular construction and directed therethrough downwardly into the opposite wall, whereby one wall will tend to assume the load imposed on the other wall without tendency to rupture the connecting webs forming the intervening cellular construction.

Another object of the invention is to provide a hollow block structure designed to provide troughs for receiving conduits and similar members and the cellular structure of which is disposed to distribute the weight of such conduits and other inserted bodies to the outer massive load supporting walls without adding material to the cellular structure for this purpose.

Another object of the invention is to provide a simple form of block of the type outlined in which the outer load sustaining walls are cored to facilitate breaking away of portions of these walls to permit the staggering of connecting joints in the wall structure, to permit insertions of key blocks,

mortar strips and the like while preserving the reinforcing effect inherent in the cellular structure connecting the load sustaining walls.

Various other objects and advantages of the invention will be in part obvious from an inspection of the accompanying drawings and in part will be more fully set forth in the following particular description of one form of mechanism embodying my invention, and the invention also consists in certain new and novel features of construction and combination of parts hereinafter set forth and claimed.

In the accompanying drawings:

Figure 1 is a perspective view of a portion of the wall formed of blocks constituting a preferred embodiment of the invention; and

Figures 2 and 3 are similar views of walls formed from blocks constructed by mutilating the standardized blocks shown in Figure 1, and by mutilating the right wall of a three wall form of building block.

In the drawings and referring particularly to Figure 1, there is disclosed a rectangular block 10 of greatest length considered horizontally and with its four outlining vertical walls substantially flat to form flat ends and sides. Each block comprises a pair of parallel, vertically extending, relatively thick load carrying walls 11 and 12, each provided with horizontally extending cylindrical cores 13. A cellular structure 14 extends between and integrally connects walls 11 and 12. This cellular construction is substantially H-shaped in vertical, transverse sectional elevation as shown in Figure 1 and comprises two vertically spaced and horizontally disposed curved webs 15 and 16, the end portion 17 of which merge into the adjacent wall at an acute angle and coact therewith to provide a relatively thick portion 18 to the wall opposite the jointures of the ends of the webs. These webs are relatively thin and are substantially semi-circular in elevation with their concaved faces forming the central portion of the top and bottom of the block. The convex sides of the webs 16 and 17 face

each other and are connected at their crown portions by means of a relatively thin, vertically disposed web 19 equi-distantly spaced between the walls 11 and 12 and coacting therewith to form horizontally extending cores 19'.
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In assembling the blocks to form the wall as shown in Fig. 1, the load carrying walls are disposed in vertical alignment and as 10 these walls are of the same width the blocks may be reversed, that is, wall 11 of one block may be disposed on wall 12 of the block next below. The upper web 17 of the lowermost block coacts with the lowermost 15 web 16 of the upper block to form a horizontally extending core 20 between the blocks, and centered between opposite faces of the wall and substantially circular in vertical transverse section as shown in Figs. 1 20 and 3.

In the showing in Fig. 1, a conduit 21 is positioned in this core 20 and disposed in the trough formed by the upper web 17 of the lower block. By this arrangement the 25 weight of the conduit 21 is distributed to the side walls 11 and 12 of the lower block through the webs of the lower block. The weight will act on the upper web placing the same under tension and will act through 30 the middle web 19 therebeneath to transmit strains to the lower web placing the lower web under compression. In this way it is appreciated that the weight of the conduit is distributed substantially uniformly to 35 both of the load sustaining walls and the curved disposition of the webs will tend to direct the strains along the planes of greatest dimension of the webs and cause the same to merge into the heavy outer walls down- 40 wardly or in the direction of greatest mass of material in these outer walls.

Referring to the end cores 22 of the block it will be noted that they are in each instance in the thickened portion 18 of the wall opposite the ends of the curved webs. By this construction it is possible to break out a portion of the outer face and at one edge of the block as noted at the lower left hand side of Fig. 2 and any such breaking away 50 will not affect the reinforcement provided at this point by the jointure of the ends of the curved webs as they merge into the load sustaining wall. Into this cut away portion 55 may be inserted a mortar strip 23 or other insert usually positioned in walls of this character. It is also possible to cut through either wall at this end core 22 so as to provide a wall 24 shorter than the wall of the standard block, as shown to the right of Fig. 2.

By suitably and selectively cutting off either the top or bottom of either of the side walls, it is possible to form blocks T-shaped, 60 L-shaped and of other configuration in end

elevation so as to horizontally stagger the joints 25 and 26 as shown in Fig. 2.
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In the showing in Fig. 3, both of the superposed walls on one side of the wall construction have been cut away as above suggested to provide a key block receiving space 75 27 on one side of the wall in which is fitted a key block 28. From this construction it will be noted that strains in the lower curved web 29 of the upper block 30 is transmitted to the lower block through the key 28 and is also transmitted through the cellular construction of the lower block 31 so as to distribute strains originating either in the superposed block 30, in the key block 28 or in the facing wall 32 to the lowermost 80 block 30.

In the showings in Figs. 1 and 2 there has been illustrated the simplest form of block which will function as described and which comprises only two load sustaining walls 11 and 12. It is obviously within the scope of the disclosure to increase the number of load sustaining walls and in the showing of the bottom block of Fig. 3, a three walled type of block is illustrated functioning as an extra wide foundation block. The three walled block of Fig. 3 can be substituted for the two walled types of blocks shown in Figs. 1 and 2.
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By means of the structure herein disclosed it is possible to utilize all of the advantages relative to economy in construction and in cost of material featured in the above identified application and at the same time provide a block of the horizontally cored type particularly designed to receive and transmit to the massive load sustaining walls those strains which are usually imposed on a wall from the contained conduits and the like and from the floorings, facing strips and the like. It is also possible to provide a standardized form of block which can be readily modified to meet specific requirements relating to the accommodation of parts designed to cooperate with wall structures and to receive conduits and other weighted members without necessity of specifically providing structural parts to compensate for the weight added by such members.
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I claim:

1. In a wall construction, the combination of a pair of superposed hollow blocks, each provided with horizontally extending cores, and comprising a pair of relatively thick load carrying walls with a cellular construction integrally connecting the walls, said cellular construction including horizontally extending curved webs merging at opposite ends into the walls and coacting therewith to form thickened portions at the ends of the webs and at the top and bottom of the load carrying walls, the walls of the blocks being in vertical alignment, a web of
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- the upper block coacting with a web of the lower block to form a horizontal core substantially circular in vertical cross section, the adjacent faces of the superposed side walls on one side of the wall construction cut away so that the cut away portions of the superposed blocks will form a key block receiving space outlined top and bottom by the thickened portions of the adjacent load carrying walls and a key block fitted in said space and acting to transmit strains from the curved web of the upper block to the curved web of the lower block.
2. A hollow building block comprising a pair of vertically extending, relatively wide load carrying walls disposed in horizontally spaced apart relation, and an intermediate cellular construction integrally connecting said wide walls, said construction including an H-shaped disposition of webs when viewed in end elevation, said webs including two horizontally extending curved webs each merging at opposite ends into the wide load carrying walls and coacting therewith to provide a thickened portion to the walls, the upper of said webs being concaved and adapted to provide a support for conduits and the like, and the lower web being convexed and providing a strain transmitting arch, said curved webs being disposed with their convexed sides facing each other, said construction also including a vertically extending web connecting the crown portions of the curved webs and adapted to transmit strains on the upper web to the lower web, said vertical web being in spaced relation to and disposed with its length extending vertically and thus parallel to the load carrying walls and coacting therewith to form horizontally extending cores, said construction acting as a whole to transmit vertically directed strains on one of said walls transversely across the block to the other of said walls, one of said walls provided with a plurality of horizontally extending, vertically spaced cores with one of said cores disposed in said thickened portion whereby the wall may be broken away along the line of said core thus permitting a decreasing in the height of the wall while maintaining the integral connection of the curved webs with said wall of decreased height.
3. In an L-shaped wall construction, the combination of a pair of superposed hollow blocks, the lower block comprising three relatively thick parallel walls with cellular constructions integrally connecting the middle with each of the outer walls, the middle wall adapted to coact with either one of the outer walls to provide a pair of load carrying walls for supporting a superposed block, the upper block comprising a pair of load carrying walls with a cellular construction integrally connecting the walls, the upper block conforming in size and configuration to the part of the lower block on which it is positioned, with the walls of the upper block in vertical alignment with the corresponding walls of the lower block on which it is positioned.
- Signed at Milledgeville in the county of Baldwin and State of Georgia this 10th day of March A. D. 1928.
- RUSSELL GLENN BONE. 75
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